REMARKS/ARGUMENTS

Applicants thank the Examiner for the time and courtesy extended to Applicants' attorney during the telephone interview of July 19, 2004. During the telephone interview, the Examiner has indicated that the claims would be patentably distinguishable over the art of record if a limitation is added to the claims to specify that the correction ratio is variable (or non-constant) in accordance with the strength of the keying power. Further, the Examiner has indicated that the claims would be allowed if a closer prior art is not found during a search following a filing of a Request for Continued Examination (RCE). Applicants' attorney has amended claims 2, 6, 12, 16 and 26 to make the above-referenced and similar changes.

Claims 2-4, 6-10, 12-14 and 16-27 remain in the present application, of which claims 2, 6, 12, 16 and 26 are independent. Claims 2, 6, 12, 16 and 26 have been amended. Applicants respectfully request reconsideration and allowance of claims 2-4, 6-10, 12-14 and 16-27.

I. Rejection of claims 2-4, 6-10, 12-14, 16-21 and 23-25 under 35 U.S.C. § 103(a)

Claims 2-4, 6-10, 12-14, 16-21 and 23-25 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 5,308,917 ("Kitamura et al."). Regarding claims 2, 6, 12 and 16, the Examiner agrees that Kitamura et al. does not specifically teach "a correction coefficient generator which generates a correction coefficient composed of a ratio of one of the velocity values corresponding to one of touch data generated

by keyboard under predetermined operation mode to a maximum value of velocity values."

The Examiner states, however, that "Kitamura teaches determination of velocity data value VELO (LOOCNT) by interpolation in various ways (S52, S54, S56, S57 as shown in FIG. 11)," and further states, "it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Kitamura's velocity, VELO and maximum velocity, Vmax for the purpose of touch curve data generation. One would have been motivated in view of Kitamura that simply dividing the velocity, VELO by the maximum velocity, Vmax is mathematically and functionally equivalent to the desired correction coefficient."

Applicants disagree with this position. Contrary to the Examiner's contention that VELO/Vmax is mathematically and functionally equivalent to the correction coefficient, applicants submit that VELO/Vmax is in no way equivalent or even similar to "a correction coefficient composed of a ratio of one of said velocity values corresponding to one of said touch data generated by said keyboard device under said predetermined operation mode to a maximum value of said velocity values, wherein the correction coefficient is variable in accordance with the strength of the keying power" recited in claim 2 of the present application. Further, "a touch curve generator which multiplies a plurality of said velocity values by said correction coefficient to shift the touch curve" would not have been obvious in view of Kitamura et al. at the time the present application was filed.

Quite simply, VELO is an output obtained by interpolating a touch curve to generate a new interpolated touch curve. By way of contrast, in claim 2 of the present application, "a plurality of said velocity values" are multiplied by the "correction coefficient," that was formed using "one of said velocity values corresponding to one of said touch data," to shift the touch curve. Therefore, there is no mathematical or functional equivalence between the "correction coefficient" of claim 2 and a number generated by dividing VELO by Vmax.

Kitamura et al. does not teach or suggest generating a correction coefficient after VELO has already been generated, because the VELO itself is a point on the new interpolated touch curve! As such, applicants do not believe Kitamura et al. would motivate one skilled in the art to generate a correction coefficient after the curve has already been "corrected" through interpolation.

Further, regarding the quantities VELOL, VELOM, VELOH as well as VMAX in the equations on col. 4, line 50 through col. 5, line 43, each of these quantities is a fixed constant. Hence, by dividing a fixed constant by another fixed constant (e.g., by dividing VELOL by VMAX), a third fixed constant is realized every single time. Therefore, there is no teaching or suggestion how one would divide any of these fixed constants by any other to generate a third fixed constant as a correction coefficient that would shift a touch curve.

A. Claims 2-4 and 21-25

Claim 2 recites, in a relevant portion, "[a] touch control apparatus comprising . . . a correction coefficient generator

which generates a correction coefficient composed of a ratio of one of said velocity values corresponding to one of said touch data generated by said keyboard device under said predetermined operation mode to a maximum value of said velocity values, wherein the correction coefficient is variable in accordance with the strength of the keying power; and a touch curve generator which multiplies a plurality of said velocity values by said correction coefficient to shift the touch curve . . . " Since Kitamura et al. does not teach or suggest such touch control apparatus, claim 2 cannot be obvious in view of Kitamura et al. Therefore, applicants request that the rejection of claim 2 be withdrawn and that it be allowed.

Since claims 3, 4, 21-25 depend, directly or indirectly, from claim 2, they incorporate all the terms and limitations of claim 2 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 3, 4 and 21-25 be withdrawn and that they be allowed.

B. Claims 12-14

Claim 12 recites, in a relevant portion, "[a] touch control method comprising . . . generating a correction coefficient composed of a ratio of one of said velocity values corresponding to one of said touch data generated in said touch curve generating step under said predetermined operation mode to a maximum value of said velocity values, wherein the correction coefficient is variable in accordance with the strength of the keying power; and multiplying a plurality of said velocity values by said correction coefficient to shift the touch curve .

. ." Since Kitamura et al. does not teach or suggest such touch control method, applicants request that the rejection of claim 12 be withdrawn and that it be allowed.

Since claims 13 and 14 depend, directly or indirectly, from claim 12, they incorporate all the terms and limitations of claim 12 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 13 and 14 be withdrawn and that they be allowed.

C. Claims 6-10 and 16-20

Regarding claims 6 and 16, the Examiner states that "Kitamura teaches a curve memory for storing conversion curve data defined by polygon line, and an interpolation means which takes into account average value data, a predetermined tone level and certain calculation the result of which is calculated correspondence as the conversion data in the curve memory," and cites Col. 1, lines 52-55, 65-68 and Col. 2, Lines 1-5.

Applicants, however, do not see in Kitamura et al. any teaching or suggestion of "[a] touch control apparatus comprising . . . a correction curve memory which stores a correction curve indicative of correction values to correct a keyboard curve indicative of a correspondence relation of velocity and touch data, said correction values corresponding to said touch data generated by said keyboard device," as recited in claim 6. Further, the Examiner continues to fail to point out where in Kitamura et al. is disclosed both a correction curve indicative of correction values to correct a keyboard

curve, and a keyboard curve indicative of a correspondence relation of velocity and touch data.

The Examiner also states that "[i]t would have been obvious that the interpolation means equivalently provides the desired scenario of correction value becoming the predetermined value." Applicants do not see, however, in the sections cited in the Office Action, namely, Col. 1, Lines 52-55, 65-68 and Col. 2, lines 1-5, any teaching or suggestion of "a corrector which corrects a plurality of the correction values stored in said correction curve memory based on said touch data generated by said keyboard device to shift the correction curve, thereby generating a new correction curve, wherein the correction values are variable in accordance with the strength of the keying power" and "when a correction value corresponding to said touch data generated by said keyboard device under said predetermined operation mode is different from a predetermined standard value, corrects said correction curve stored in said correction curve memory such that said correction value becomes the predetermined standard value."

Since Kitamura et al. does not teach or suggest such touch control apparatus, claim 6 cannot be obvious in view of Kitamura et al. Therefore, applicants request that the rejection of claim 6 be withdrawn and that it be allowed.

Since claims 7-10 depend, directly or indirectly, from claim 6, they incorporate all the terms and limitations of claim 6 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 7-10 be withdrawn and that they be allowed.

Claim 16 recites, in a relevant portion, "[a] touch control method comprising . . . storing a correction curve indicative of correction values to correct a keyboard curve indicative of a correspondence relation of velocity and touch data . . . correcting a plurality of said stored correction values based on said generated touch data to shift the correction curve, thereby generating a new correction curve, wherein the correction values are variable in accordance with the strength of the keying power . . . when a correction value corresponding to said touch data generated under said predetermined operation mode is different from a predetermined standard value, corrects said stored correction curve such that said correction value becomes the predetermined standard value." Since Kitamura et al. does not teach or suggest such touch control method, claim 16 cannot be obvious in view of Kitamura et al. Therefore, applicants request that the rejection of claim 16 be withdrawn and that it be allowed.

Since claims 17-20 depend, directly or indirectly, from claim 16, they incorporate all the terms and limitations of claim 16 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 17-20 be withdrawn and that they be allowed.

II. Rejection of claims 22 and 26 under 35 U.S.C. § 103(a)

Claims 22 and 26 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Kitamura et al. in view of U.S. Patent No. 6,075,196 ("Fujiwara et al."). Applicants submit that claim 22 is allowable because it depends from claim

2, and incorporates all the terms and limitations of claim 2 in addition to other limitations, which together further patentably distinguish claim 22 over the cited references.

Regarding claim 26, the Examiner agrees that Kitamura does not use the correction curve with respect to a "single keying power." The Examiner states, however, that "Fujiwara on the other hand teaches a relationship between a key velocity and a string-striking velocity such that white points represents results of relationship between the key velocity and the string-striking velocity with respect to a single-hit performance technique," and cites FIG. 5 and Col. 9, Lines 35-42. The Examiner also states that "the single hit performance technique as represented in Fig. 5 [of Fujiwara et al.] is equivalent to the desired 'single keying power'."

In the Office Action, the Examiner does not address applicants' response in the December 23, 2003 amendment, but merely repeats the reasons previously given for the rejection. Applicants once again submit that the "single keying power" in claim 26 is different from the "single hit performance" of Fujiwara et al. For example, FIG. 5 of Fujiwara illustrates a number of white circles, each representing a "single-hit performance." However, the string-striking velocity of these single-hit performances vary from about 100 mm/sec to about 750 mm/sec. Applicants submit that this does not teach or suggest that the correction curve is generated through pushing at least one of the plurality of keys using a single keying power. Instead, Fujiwara et al. teaches performing multiple single hits with multiple different string-striking velocities (and therefore multiple different keying powers).

By way of example, Fujiwara et al. recites regarding FIG. 5, "white points represent results of the relationship between the key velocity and string-striking velocity with respect to a single-hit performance technique, wherein a human operator completely depresses down the key to the end position. In addition, black points represent the results with respect to a multiple-hit performance technique, wherein a human operator repeats hitting the key in such a way that the key is not depressed down to the end position." (Emphasis Added, Col. 9, lines 38-46). It is clear from this passage that the "single-hit performance" does not refer to a single keying power, but instead to a complete depression of the key to the end position. In fact, FIG. 5 illustrates single-hit performance at various different string-striking velocities, i.e., at various different keying powers. As such, FIG. 5 appears to teach away from "pushing at least one of the plurality of keys using a single keying power."

Claim 26 recites, in a relevant portion, "[a] touch control apparatus comprising . . . a correction curve memory which stores a correction curve indicative of correction values to correct a keyboard curve indicative of a correspondence relation of velocity and touch data, said correction values corresponding to said touch data generated by said keyboard device, wherein the correction curve is generated through pushing at least one of the plurality of keys using a single keying power...wherein the correction values are variable in accordance with strength of the single keying power." Since Kitamura et al. and Fujiwara et al. do not teach or suggest such use of a single keying power

in a touch control apparatus, applicants request that the rejection of claim 26 be withdrawn and that it be allowed.

III. Rejection of claim 27

In the Office Action mailed March 22, 2004, the Examiner did not specify a reason for rejecting claim 27, which was newly added in the amendment mailed December 23, 2003. As claim 27 includes subject matter which further patentably distinguishes it over claim 2 from which it depends, applicants request that the Examiner provide a basis for the rejection of claim 27 pursuant to MPEP § 706.02(j). Otherwise, applicants submit that the rejection of claim 27 should be withdrawn and that claim 27 should be allowed.

For an explanation regarding the patentable distinction of claim 27 over the art of record, please refer to page 15, second full paragraph, of the December 23, 2003 amendment, which is incorporated by reference herein.

In view of the foregoing amendments and remarks, applicants respectfully request allowance of claims 2-4, 6-10, 12-14 and 16-27 and an early issuance of a patent. If there are any additional issues that can be addressed over the telephone, the Examiner is invited to call applicants' attorney at the number listed below.

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By _____

Jun-Young E. Jeon
Reg. No. 43,693
626/795-9900

JEJ/sd
JEJ PAS575145.1-*-07/19/04 4:42 PM